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THE DOCTRINE OF INTRO-ANIMATE PATHOLOGY:

Being a Thesis proposed by JOHN C. NYANDER, *a Native of Calmar, under the Presidency of Doctor Charles Linnæus, at Upsala, 23d June, in the year* 1757.

OF all diseases, there are hardly any of which the origin has appeared to Physicians to be more abstruse, than those called contagious: inasmuch as a body, hitherto in the most perfect state of health and in the strict observance of every rule of diet, is found equally liable to be contaminated, as that of one giving himself up to every sort of excess, provided only, there shall be too near an approach to a person laboring under disease.

And our wonder is the greater on observing that there are many other contagious diseases, which being indigenous amongst us, arise as it were spontaneously almost every year, such, for instance, as the itch, hydrophobia, hooping cough, and dysentery; whilst there are others again which never arise, except from holding intercourse with diseased persons having these complaints from a foreign derivation: such for instance are the plague, measles, smallpox and syphilis. And here it will suffice to quote a few of the conjectures which have been formed by some of the most learned Physicians in respect to the origin of these, since various opinions have been cherished by various writers.

They have been ascribed to putridity, by Fracastorius, Rhodius, and Mindererus; to a sulphureous self-increasing putridity by Hoffman; to a sort of fermenting miasma by Junkerus; to somewhat corrosive by Alpinus; to an acrid volatile salt by Sylvius; to an arsenical virus by Sorbait; to imagination and terror by Rivinus; whilst others again have imputed them to virulent exhalations from the earth; others to celestial influences and conjunctions of the planets; some also to exhalations from heaps of dead bodies corrupting and vitiating the atmosphere; and others, as Kircher, &c., to a verminous putridity. But, of all the above quoted causes, which are universally brought forward by authors, that appears to us to be the most probable, which asserts "that contagion arises from living animalcules," as Rivinus and others, who ascribe the itching of Exanthemata to the existence of acari. In our attempt therefore to proceed by this path, we shall expatiate no further than we may feel ourselves justified by the guidance of our experience, and whenever we shall arrive at that point which is only probable, but which has not hitherto been actually made the subject of ocular demonstration, we shall merely touch upon it with all brevity, and state it as an hypothesis.

Contagious diseases, then, for the most part, all coincide in this peculiarity, that they are attended with exanthematous eruptions, either externally or internally, insomuch that even hydrophobia is said to produce certain pustules underneath the tongue ; so that in all contagious maladies there exists a certain exanthematous matter, the eruption of which usually mitigates the febrile symptoms ; that the presence of this matter excites bodily uneasiness, if not feverish actions, and that, even in its mildest form, the disease is exacerbated at some certain hour of the day, or towards evening. That the power of the disease is increased by *sweet* articles, but diminished by *bitters*, and that the irritation is excited by *fat* articles of diet. That it is somewhat repelled by cold, but like everything animate, is cherished by warmth, although it appears to be expelled by great heat : thus, from the application of heat, the itch and every exanthema is augmented, and from increase of heat and fever driven outwards to the warm surface of the body. That they are destroyed by *anthelmintic* remedies, and therefore *sulphureous* remedies cure the itch : and thus *mercurial* medicines, (as they are destructive to nearly all insects), cure both the itch and syphilis, and prove preservative both from the plague and smallpox. And that as tobacco kills all minute insects, fumigation with it prevents contagion. That both analogy and the sense of itching in the pustules of contagious diseases, seem to warrant the same inference. That both in itch and dysentery, the existence of minute insects has been the subject of ocular demonstration. That Langius had observed them in measles ; and Kircher in the plague ; Hauptmann in syphilis (animalcules resembling slugs) ; Zeigler in Petechiæ ; Lusitanus and Porcellus in smallpox, and that the last mentioned had observed also worms in cases of serpigo and other cutaneous diseases.

Both from analogy, therefore, as well as from all the experience hitherto acquired, we may very easily believe that very minute insects of that kind, such for instance as *acari* of various species, may be the causes of several contagious diseases. Nor is their size or structure at all repugnant to such an idea—since there are animalcules so minute that the human eye unassisted by the microscope cannot even perceive them. The lynx-sighted Lewenhoek observed thousands of insects (or animalcules more properly speaking) which added together scarcely equaled in size the hundredth part of a grain of sand, and even in those fluids which to the naked eye seem altogether pure and diaphanous. While the accurate and ingenious Reaumur has stated it to be his opinion, that that obscure vapor which somewhat darkens the atmosphere in summer, is nothing else than myriads of insects, so minute as entirely to elude human vision. And the same naturalist has demonstrated, that these do not exist separately only, but also congregated in societies similar to those of bees and ants, and that these also observe amongst each a certain regular order.

From any evidence of our senses, therefore, we must draw no argument as to the impossibility of the thing : for the divine PROVIDENCE of the all-wise Creator of the universe is equally manifested in the most minute, as well as in the greatest, of his arrangements. Whilst we inspect a living acarus, we feel assured that, minute as it is, it is provided with muscles, nerves, veins, arteries, and viscera: and that all these, however small, are yet adapted to contain the most subtile fluids, calculated to circulate through them: all this too we are perfectly warranted in believing. Whence these animalcules shall have proceeded we may well wonder, but we are scarcely warranted in that wondering, if at the same time we but think that these being of such very minute proportions, that they hardly exceed in size the atoms of the atmosphere, can yet fly through the air and seek out the most minute chinks, exactly in the same way as mucor arises constantly from its seeds, sowing themselves wherever any putrid matter shall exist in a state fitted for their reception.

SCABIES.

Of all contagious ailments, this probably is the most common, and the most obvious to our senses. It is a well ascertained fact that this cutaneous malady is excited by the *Acarus Syro*, which, although so minute as scarcely to be seen by the naked eye, can be generally detected lurking under the skin, where there is a certain bluish spot, and that it can be taken out upon the point of a needle and placed upon the nail. If then we place it upon the skin and breathe upon it gently, so as to excite it by the warmth of our breath, it can be easily distinguished creeping away and displaying its minute structure, till it shall have found out a wrinkle in the skin, when it immediately begins to make a burrow for itself exactly in the manner of a mole, by digging down with its claws. The Acarus (No. 1195 in Linn. Fauna Suec), although a little more highly colored, resembles it very much. If a morsel of cheese, or a little flour, be placed aside for some time, so as to remain undisturbed, we frequently observe myriads of these insects or mites feeding on either of these substances; hence too, it happens, that when nurses, instead of using the powder of lycoperdon, or flowers of zinc, scatter wheat-flour on the groins and armpits of infants suffering from *Intertrigo*, these parts become frequently attacked with the itch, which will return there again and again after being cured, unless that practice be left off: and these infants too will communicate the disease to others. We therefore conclude that the acari produced in wheaten or oat flour, and those of the itch pustules, constitute one and the same species.

Dr. Zweib has observed these acari depositing their eggs, multiplying themselves in a very short period of time, and has seen them living for several days, outside the body. But Lewenhoek has long taught and delineated them as being viviparous.

We find therefore that the itch is propagated constantly, either by means of actual contact, or by articles of dress, or from associating with infected persons. The itch-insect seems to be impatient of cold, but agrees well with warmth, wherefore the itch is repelled by cold and exasperated by heat, so that we have found that the same cause which shall have excited the itching externally, hath produced fever internally, which has not ceased before full eruption or efflorescence. Wherefore reasoning on this phenomenon, and comparing it with the causes of exacerbations in fevers, (which also excite of themselves a very violent itching,) it is natural to entertain the opinion of these also being contagious. For a like effect seems to betoken a similar cause, and nature, which is ever self-consistent, is scarcely ever wont to make violent starts—although, from the obscure nature of the subject, we do not feel ourselves warranted in further assumptions.

In the itch of animals (called mange) acari are detected with greater difficulty, not however that they are altogether exculpated from them, since there is another species (the acarus exulcerans) which we can easily discover by means of a magnifying lens, which are distinguished by four hind legs and twice as long as their body : and thus the cause too of this malady is placed beyond all doubt. And as we are in the habit of preserving specimens of insects in our museums by the presence of the ambrosiacal drugs, such as musk, civet, sweet flag, camphor, the essential oil of birch-bark, &c. ; so we also find the exhibition of these remedies proves quite successful in driving outwards the eruption of exanthemata, when they have been suddenly repelled. When musk has been suspended in a necklace round the throats of infants, it has been found effectual in preserving them from smallpox when raging epidemically, as has been proved experimentally by our president Linnæus, and as is customary with the inhabitants of Norway, and as appears to be the case from some instances quoted in the lately published acta petropolitana.

In respect to the *itch of old age*, the same reasoning applies, and experience has also demonstrated the existence of acari therein. When it has once attacked the body, should it go off spontaneously, it very seldom returns. Some years since we observed two goats infected with the mange chiefly in the mouth and face ; one of them died of it, but the other, to whom musk was given, became perfectly sound, within the short space of three days.

THE DYSENTERY.

The dysentery is an epidemical itch, attacking the internal surface of the intestines, as appears from the dissections of the bodies of those who die from dysentery, and that it is propagated by means of places of necessity, and through common sewers, there is not any experienced physician who now entertains a doubt. Bartholine narrates the case of a certain Danish physician at Heilsinburg in the last (17th) century, who having been frequently attacked by dysentery, examined his excretions, and found them swarming with living insects, in a state of motion, and so minute that he could scarcely observe them. And in this place we must not omit to mention a case in the highest degree illustrative of the above quoted fact.

About four years ago, Dr. Rolander, being then a pupil of and boarded in the family of our president Linnæus, having been attacked with dysentery, was cured in the usual manner with preparations of rhubarb and paregorical remedies. Eight days thereafter he relapsed into the same disease, and was again cured by the same remedies. But a period of eight days having again past, he was a third time attacked with dysentery. A rigorous inquiry was now instituted to detect the cause of this, but all in vain, seeing that the patient enjoyed the same table and followed the same course of life with all the other members of the family, who were enjoying perfect health. Therefore our learned President advised the patient (who was much addicted to the study of entomology) to examine carefully his dejections, by which it might the more clearly appear, whether the above quoted observation of Bartholine really held good or not. On Rolander's doing so, he reported that he had observed myriads of animalcules, and which upon being accurately described proved to be exactly similar to those of flour. And some one conjectured that the cause of these was to be found in a certain nocturnal beverage, whilst others again conceived that this was not adequate to produce such an effect.

Rolander had not been accustomed to take any beverage during his meals; during the night, therefore, being incommoded with thirst, he was in the habit of swallowing a very diluted beverage from a cup (a bicker) made of juniper wood; on inspecting this cup, he found a small whitish line scarcely to be perceived by the naked eye, running between the crevices of the wooden staves of the cup, and having applied a magnifying glass, he found that all this white line consisted wholly of innumerable acari, of the self same species with those which he had remarked in his excretions. On the beverage being poured into a cup they did not stir, but at midnight having quitted their retreats, they emerged to the surface and floated and remained there till the hour of ten in the morning, feeding themselves; when they dived and re-entered the chinks they had quitted. This fact he discovered after repeated observations. Having taken out these acari and placed them upon a moistened watch-glass, they were found to be but little irritated by the adfusion of various liquors, and that even after the application of oil itself they remained unhurt: but they were particularly annoyed by the application of spirits of wine (alcohol) and most especially by the spirituous tincture of rhubarb. A fact especially worthy of notice, seeing that rhubarb is actually a specific for dysentery, and that the lapathum acutum or sharp pointed dock, which is a plant very nearly related to it, is a common remedy for the itch, and is demonstrative both of the affinity and analogy of the two diseases, and their remedies. These acari adhered firmly to the wooden cup after three ablutions in hot water. Rolander also searched for them in other situations, and found them most frequently in vessels containing acid beverages and also beneath the bungs of casks. That dysentery, which infects the territories of Sweden almost every year, during the harvest time, as well as that which is common in camps, most probably derives its origin from the self same acari lurking in acidulous beverages, and which, by means of the necessaries, are propagated, and thus give rise to what is called contagion. In the Old Testament therefore it was enjoined that every soldier should immediately bury in the ground his own excretions. Would it not therefore be advantageous both to the Swedes, and all soldiers who are encamped, to use in preference earthenware and metallic drinking vessels, because these insects can only with difficulty adhere to such vessels. It is hurtful, as the common proverb goes, to drink during the night when languid from an empty stomach, unless the superior portion of the beverage be first poured off and rejected. The vulgar are ignorant of the real cause for this custom, but the above recited observation, proves that these acari are then in motion, and hence no doubt has arisen this fashion. A pain in the bowels is excited by a draught of vapid liquor, which again is generally suppressed by taking a small quantity of proof spirit, which in its power of injuring these acari approaches nearest in efficacy to rhubarb.

THE HOOPING COUGH.

This disease, not so much known to our progenitors as at present, now generally attacks our infants. The epidemy therefore of this malady must of necessity be such a miasma that it can easily evaporate from the sick and be propagated and multiplied, but we apprehend that all these predicates can only be attributed to something endued with life. The domestic remedy which the Vestrogoths or Norwegians commonly employ against this malady consists of *the infusion of the ledum palustre*, (a plant which is also employed to cure swine and cattle of lice,) and which being remarkable as a most powerful narcotic and strong scented poison to insects, seems to denote that the causes of this malady also are to be found in animalcules. And to this is to be conjoined the very remarkable fact noticed by Dr. Wahlbone of Calmar, who prescribed for an infant, laboring under this disease, some musk julep, made according to the London Pharmacopœia Formula, from which remedy after being taken for two days, the patient's body became flushed with an efflorescence or slight itching, and the hooping cough disappeared: a short period having elapsed, the complaint returned, and the itching having receded internally, he again administered the same remedy, which again produced its first effect, and the infant was perfectly cured. May not therefore the hooping cough be derived from a certain species of acari, which more particularly affect the organs of respiration, and thence derive their nourishment, since the disease is both cured and relieved by the same sort of remedies which destroy acari.

Why this same disease, like the smallpox and the measles, should attack us only once during our lives, and but very rarely returns, we are just as ignorant as why the itch of old age should not make more frequent attacks.

THE SMALLPOX.

Between the smallpox and the beforementioned diseases there is a great correspondence. It originates from some unintelligible cause either in Europe or America, and is never transferred to us (in Sweden) except by means of contagion. But it is very likely that it is excited in the same manner, more especially as children who have been fed too much on a *sweet* diet, and whose fluids are unusually bland, are more infected with this disease, in like manner as they are with the itch.

Some years ago, when smallpox was very fatal at Upsala, and was carrying off nearly all the infantine population in the neighborhood, our president Linnæus suspended necklaces containing musk around the necks of his own children, as has long been the custom amongst the Norwegians; by which means he succeeded in preserving them uninfected from this fatal scourge. It has latterly become the custom to foment the thighs of patients laboring under the smallpox, in the common way, with a fomentation of milk sweetened with sugar; whereby, the insects appear to be attracted as it were to those parts of the body; for the thighs seem to become quite beset by pustules, but all the rest of the body is much less affected with the eruptions.

It is a custom with the Chinese, in preparing their children to receive the smallpox, to administer previously some mercurial and sulphureous remedies, and a little saffron also (with which last drug the Chinese sailors dye their shirts to prevent their being absolutely devoured with vermin) is applied to the eyes, to guard these delicate organs from the smallpox virus; they also add a quantity of musk to the matter used in their inoculation, which is there performed by stuffing some dossils of lint contaminated with the pus up the nostrils. By which addition of musk they think to expel the acari from the sanies produced in the frontal sinuses—they also excite some artificial issue, which is not allowed to be healed up, till the whole disease has quitted the body, being of opinion that the exanthematous matter is chiefly accumulated there, from somewhat animate, which, owing to the urgency of the internal injury, is driven outwards and thus seeks vent, which, being thus obtained, procures relief to the patient.

THE MEASLES.

This is a disease which, from its nature and foreign origin, seems nearly allied to the smallpox—the seeds of columbine (*aquilegia*), (which are poisonous, and nearly resemble those of *staphisagria* or stavesacre, commonly exhibited as a remedy against the itch in children, and which, in the hands of ignorant old women, have frequently proved fatal to infants, when given in too great doses)—these seeds of *aquilegia*, in Sweden, when powdered on some musk, are very commonly given, as a remedy, to patients suffering from measles and smallpox, that the eruptions may, by these means, be driven outwards to the surface of the body, and the internal viscera relieved from the violent action of these diseases. In the obstinate cough and oppression of the breast which affect persons attacked with measles, when scarcely anything is found to avail, flowers of sulphur, in small and repeated doses, conjoined with febrifuges, are found to be quite a specific. In a word, all remedies which are found to be efficacious, either as curatives or prophylactics, to persons attacked with either smallpox or measles, also possess great efficacy in destroying insects, either because they cannot endure the smell of these medicines, or because they are thereby driven outwards to the surface of the body, and expelled.

THE PLAGUE.

It seems to be an assured fact, that the plague never arises in the seaport towns of Sweden, unless from a contagion imported from foreign countries. That it is multiplied and propagated—that it also rages and abounds chiefly in low and putrid regions in the warmer countries. That it gathers strength and becomes more inveterate when assisted by a certain corrupt state of the atmosphere, being checked towards winter, but breaking out afresh on the coming on of spring and summer. That according to the testimony of Dr. Timoli, it, the plague, is not found to enter houses that have been thoroughly cleansed and purified. That its advent is generally foretold and preceded by several, and for the most part contagious, diseases. That it is always attended by exanthematous eruptions. That its miasma can be equally swallowed mixed with the saliva, or introduced through the pores of the skin. That the powers of this miasma, according to the experiments of Dr. Sylvius, are weakened by acids diffused through the atmosphere, and destroyed by acids themselves. That this pestilence, when lately for the first time it broke out at Moscow, was cured, according to the testimony of *Schreiber*, by mercurial medicines, the most noted remedies against the itch arising from acari. That musk and camphor also, according to the same author, were found to avail greatly in the cure of the plague. All which observations, which are most true, appear to indicate that insects are in reality the cause of pestilence.

THE SYPHILIS.

That syphilitical diseases, we are of opinion, more especially as they never arise without the contact of fluids, (through sexual intercourse, &c. &c.) seem conjoined by an intimate analogy with the plague, and that they take their origin also from animalcules, but which insects are aquatic. Hence also, it seems to appear, that fevers of that kind are excited by acari, seeing that they are expelled by medicines appropriated to their destruction. Wherefore, that the itch and the dysentery may frequently arise amongst ourselves (Swedes), follows from the above recited facts, since it appears that the cause of the former is common in the flour of grain, while that of the latter is to be found in our drinking cups. But, on the contrary, that the insects producing the plague, smallpox, &c. are exotic, and it appears probable cannot exist amongst us unless imprisoned in an infected body, or some other, to them, properly adapted mode. Perhaps the cause of this circumstance is to be attributed to our more severe climate, or to the more tender nature of these acari ; for if we may be permitted to reason from more obvious to more subtle facts—while some insects are indigenous amongst us, some there are only to be found in summer, while we observe others again, which are only found to live within our houses, where the artificial warmth of a fire preserves them alive. These last, we are of opinion, have proceeded from countries lying more towards the south, but of all these the tenderness has not been equal, for we also observe insects which have come hither from the warmest regions of India, and which have adapted themselves to our climate and country. The same thing has happened, likewise, to those animals, of whom a much greater number must have been found formerly in some particular places ; whence indeed they must have diffused themselves far and wide, and produced their own melancholy effects. Of these, some, it may possibly be conceived, have become domesticated amongst us, and thence we may be able to explain why some diseases, formerly unknown, have arisen in certain localities and become disseminated afterwards. Hence, too, we are naturally led into that track, whereby we can discern the reason why certain diseases are more prevalent at some particular seasons of the year. For besides, that most contagious diseases rage chiefly during the summer quarter, being that when all insects most abound, the greatest difficulty, and arising from the artificial œconomy of these animalcules, which, by the wonderful analogy of exanthematous diseases, we acknowledge, may possibly be solved—namely, in what manner does a dead body always throw out its own peculiar eruptions, according to the variety of circumstances, from the internal parts towards the surface, in so determined a manner. What, I say, is more probable, than that organized animals effect this ? What more adapted for this act, than the most minute insects, whose wonderful manner of existence excites the admiration of the best naturalists ? What is there to hinder these most minute insects from inhabiting our bodies, seeing that we cannot be said to be altogether free from others of greater size ? For many entire insects, of various kinds, both in a state of metamorphosis and even after having suffered their changes, have been found alive in the human stomach, &c. &c.

VALUE OF ACCURATE PROGNOSIS.

On the value of accurate Prognosis, in a letter to Sir Henry Halford, Bart. By George E. Male, M.D., one of the Physicians to the Birmingham Hospital.

Sir,—Having read with much interest, the papers re-published by you, in the small volume with which you have lately favored the profession, my conscience reproves me for not having fulfilled my intention of communicating to you a case of ischuria renalis, which I did intend to submit to your perusal at the time it occurred. I considered this communication due to you, as it was to your observations on that disease, contained in an early volume of the Medico-Chirurgical Transactions, that I was enabled to deliver a prognosis at the very commencement, of the only instance of it I at that time had ever seen. I will give the case, without comment, as I find it in my note book.

—— Dyer, a publican, aged 65, neither fat nor bulky in stature, temperate, and generally healthy, was seized on Monday, 7th of May, 1821, with pain in his bowels, for which he took tincture of rhubarb, castor oil, and salt, at different times, which purged him considerably ; he passed no urine, nor did he feel any inclination to do so. The next day he was free from complaint, and rode on horseback three or four miles, without pain or inconvenience. I was called to him on Friday, the 11th, on account of the cessation of the secretion of urine, and found him apparently in perfect health, without pain, or great uneasiness of any kind, nor had he experienced any since Monday. There was no swelling of the legs nor abdomen, nor any fulness of the region of the bladder ; but he experienced a dull sense of weight about the kidneys, and almost a total suppression of urine. The quantity passed since Monday (four days) did not exceed half a wineglassful, but it was clear, and of natural appearance, unmixed with gravel. He had experienced former attacks of this kind, and vomiting relieved him ; he had formerly passed gravel. His bowels being costive, I ordered him one grain of the extract of elaterium, having often observed its good effects in exciting the action of the kidneys ; the warm bath was proposed, but he objected to it, as it had done him no good on former occasions; therefore fomentation of the loins was substituted, and the following mixture or dose.

R. Aquæ fontanæ. Aquæ menth. piperit. āā ʒ iij. Potassæ supertartratis, ʒ i. Spt. ætheris nitrici, ʒ ss. M. capiat coch. duo larg. tertia quâque hora.

12th. The pill of elaterium had but little effect on the bowels, but excited some vomiting. No urine passed.

Recollecting a case recorded in the Medico-Chirurgical Transactions, by Sir Henry Halford, I apprised the patient's friends of his danger, and foretold that he would, in a few days, become senseless, and die as if by apoplexy. Seeing no appearance of any great deviation from health, my prognosis was received by them with silent doubt. The elaterium was repeated in the same dose, and I took care to ascertain that it was genuine. A catheter was introduced into the bladder, but very little urine followed. Repeat the mixture. R. Tinct. digitalis, ʒ ss. Tinct. Lyttæ, ʒ i. M. sumat guttas LX. tertiâ quâque horâ ex decoct avenac cyatho.

Having no thirst, he is unwilling to drink. Pulse 86, soft but full; some stupor and drowsiness is experienced. Mitt. sanguis ad ʒ xiv. et appl. emplast. lyttæ largum lumbis.

13th. The bladder again examined with the catheter; no urine followed, nor has more than half an ounce been passed. Still no pain. Blister rose well, and discharged much. The elaterium produced two or three stools; much nausea, and some vomiting. Continue the medicines. Stupor increases. Repet. venesection ad ʒ xii.

14th. No urine. Apoplectic symptoms come on; his eyes staring and fixed; totally unconscious, and unable to take medicines; apparently no pain, but he is bathed in profuse perspiration, which has a very strong, and somewhat urinous smell. Pulse 76, full and soft. He continued in this state till the next morning, when he died.

Dissection. Thirty hours after death, the body was opened by Mr. Russell, who attended the patient with me. The *right* kidney was much enlarged and inflamed. The tunica adiposa was more than usually loaded with fat, of a dark red color, and exhibited marks of considerable inflammation. The upper part of the ureter was blocked up with loose sabulous matter, a quantity of which was also found in the pelvis of the kidney, and in the infundibula, but not of a size much larger than the head of a large pin. The upper part of the ureter and the pelvis contained a small quantity of urine. The *left* kidney was almost entirely absorbed, and had evidently long since ceased to exercise its functions. In the only infundibulum which remained, was impacted a small calculus, about the size of a pea. The ureter was pervious. The bladder was healthy, and contained a small quantity of urine. The urethra was in its natural state. The liver and other abdominal viscera were sound. We were not permitted to examine the head.

As I believe there are not many cases recorded, similar to those already communicated by you to the College of Physicians, I trust that this addition to them will not be unacceptable to the public.

I have the honor to be, Sir, your obedient, humble servant,

Birmingham, Sept. 1821. GEO. EDW. MALE.

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BOSTON, FEBRUARY 29, 1832.

EARLY SETTLEMENT OF THE TERRITORIES OF THE NORTH.

Among the numerous instances of a judicious direction of national wealth and enterprise to the advancement of science, within a few years, not the least interesting to ourselves as Americans is the expedition fitted out by the Danish government to explore the east coast of Greenland. It may not be generally known to our readers, that there remain in the annals of Iceland particular and detailed accounts of a colony furnished by that island to the opposite coast of Greenland as early as the tenth century; of the formation of several settlements on both sides of Cape Farewell, whose names are given; of the conversion of the colony to Christianity; of the establishment of several monasteries; of the bishops successively sent thither; of the trade between that country and Norway; of the subsequent decline of the colony, and of a terrible pestilence called *the black death*, in the year 1348, which hastened its ruin. Such is an abstract of the history of Old Greenland, the location of which may be found variously laid down on the maps, or altogether omitted, according to the fancy or the credulity of the authors. New Greenland, established by the Danes, is of far more recent origin, and dates only from the early part of the last century. It is also confined entirely to the western part of the country, it having been found wholly impracticable to approach the eastern coast on account of the immense mountains of ice by which it is defended. This circumstance, and the ill success which attended the first attempt of the new settlers to discover any trace of the original colony, had already induced many to regard its history, however circumstantial, as wholly fabulous; when, about the middle of the last century, it was unexpectedly confirmed. At this time the Danish missionaries discovered on the coast the ruins of large stone houses, of churches built in the form of a cross, and fragments of broken bells; they also discovered that the inhabitants had preserved a distinct remembrance of these Norwegians, of the places where they dwelt, of their customs, the quarrels their ancestors had with them, and of the wars which ended in their destruction. Since that time, the attention of the Danish government has been occasionally directed to the investigation of the traces of the eastern settlement, and within the last two years an expedition was fitted out for this express purpose, under the command of M. Graah, captain of a frigate in the Danish navy. Under circumstances of great difficulty, the party succeeded in making their way as far as 65°, where their further progress was entirely prevented by the ice. From 60° to 65° M. Graah found only 500 or 600 inhabitants, and no direct evidence could be obtained concerning the ancient colony. The only circumstance, and that a very remarkable one, which goes to sustain the historical records on this point, is, the physical character of the inhabitants themselves. It is well known that the Greenlander, as hitherto described, presents all the characteristics of the Esquimaux race: namely, short stature, not exceeding five feet; brown or reddish complexion, coal black hair, flattish nose, broad face, small hands and feet, and tendency to excessive corpulence. The men found by M. Graah possess none of these characteristics, but on the contrary are nearly allied in all respects to the Scandinavians of Europe. They are for the most part *above* the middle stature, having the European form of head and expression of countenance. Their persons are meagre, but nervous and finely formed, without any appearance of weakness, and they are more active and robust than the inhabitants of the west coast. The color of skin of the women and children is quite as clear as that of Europeans, and they have often brown hair, which is never seen in the other inhabitants of Greenland. Some of the men allow their moustachios to grow, others tattoo their arms, and all the women have their arms, hands, and chin tattooed, an operation which they execute themselves. Exposed to great physical suffering and very often to famine, they do not appear to live beyond the age of fifty; and the population seems to be decreasing. In their moral character they are very estimable; and the reported good nature of the husbands, submission of the wives, the obedience of the children, and the mutual affection and confidence of the whole people, make it difficult to realise that they are pagans. Polygamy is not common among them; they do not change their wives, and their morals appear to be irreproachable.

We have transferred the above account to our pages, because it appears to us, if correct, to present an important physiological fact. That a people separated during four hundred years from their mother country should during this long period have degenerated so little, as to be perfectly distinguished at once by their appearance from those around them, though exposed to the same physical agents, and obliged from circumstances to adopt their habits and customs, is sufficiently remarkable to be recorded. In other respects the observations made by Captain Graah are highly interesting. He found the extreme of cold in the winter much less than in the corresponding latitude on the western coast, the thermometer not falling below 17° of the centigrade scale or zero of Fahrenheit, and during the prevalence of a south wind, sometimes rising suddenly to 13 cent. or 56 Fahr. On the other hand, the summer he passed there was cold, the highest degree being about 60° Fahrenheit. The inhabitants obtained a precarious subsistence by fishing, but often suffered exceedingly from want. Their food is principally the dried flesh of the seal. Mention is also made of bears, hares, birds and salmon; but M. Graah says that even at the latitude of 63° 36′ reindeer and hares are known only by name. There was more appearance of vegetation than on the western coast, but the growth consisted mostly of sorrel and scurvy grass, with one or two kinds of flowers, and low bushes of willow and birch, of which the maximum growth is two feet. Captain Graah heard of inhabitants farther north, and had hopes of being able to gain some information concerning them.

CHURCH BURIAL.

We have remarked, without the least surprise, some recent trouble about the cemetery under St. Paul's Church in this city. It is said that the air in the church is offensive, and this is supposed to arise from the animal decomposition going on beneath. The same has been remarked, in times past, in other churches that have tombs under them, and we would take occasion again to express our regret that liberty should ever have been given to bury the dead in such places. It is said that an examination of the vaults has been made by the intelligent superintendent of sepulchres, and no offensive odor has been there discovered; but is it not possible and even most probable that the same impure air which, in the cold cellar, should present nothing perceptibly offensive to the smell, would become very distinctly disagreeable when heated as it is in the body of the church. It would be regarded as a fortunate circumstance if this incident should lead to the abolishment of a practice alike useless and unphilosophical, which can lead to no good and may be productive of injury.

We intend not to enter into a discussion of the much-agitated question which is suggested by the remarks already made, for whatever may be the diversity of opinion among medical men respecting the *precise* influence of animal decomposition in the production of disease, no fact is better established than that a man will live longer and enjoy better health who is never exposed to the results of such decomposition, than if he were often brought into contact with them. We might go further, and say, that whilst the records of medical history present numerous instances of disease and death fairly attributable to animal decomposition, there are few *facts* that tend to invalidate this conclusion. The common argument is, that persons who spend their lives in the vicinity of butcheries, manufactories of adipocire, &c. enjoy good health notwithstanding their constant exposure to the impure air necessarily arising from such places. There are some circumstances that tend to explain this fact, so as to destroy the inference usually drawn from it. How is it, we would ask, that an epidemic or an infectious disease ever ceases to prevail in a place in which it has appeared? Why is it that Physicians, and still more particularly nurses, usually enjoy a remarkable immunity from these diseases? It is probably owing to the same law of the system, by which it may be gradually made to bear without injury doses of poisonous drugs, which, taken at the beginning, would be destructive to life. Ardent spirits, opium, laxative medicines, and many other articles; by their constant use the system becomes gradually insensible to their peculiar stimulus, and at length quantities almost incredible may be swallowed without producing any apparent influence on the body. So does the system, by constant exposure to peculiar external influences, become insensible to them ; and it is in this way we apprehend that nurses reap their immunity, and that the habitual dwellers in an atmosphere which under certain circumstances would poison others, are protected from these baneful effects. We may be made to bear and to enjoy intense cold when it comes upon us by degrees; but let it come at once, and we need not at this time attempt a detail of its consequences. Certain properties in the atmosphere which are productive of certain states of disease, as in epidemic diseases, act much more powerfully on the system at first than at any subsequent period of their prevalence. At their commencement, epidemics are, usually if not always, more severe and unmanageable than at any other time. As the system becomes gradually accustomed to the poison—if we may be pardoned the expression—which constitutes the peculiarity of the atmosphere at such periods, it becomes less sensible to its influence, and at length it ceases to be affected by it at all, and the epidemic disappears.

If these sentiments are correct, they diminish the force of the argument usually brought forward to prove the innocuousness of animal decomposition. They will show also why it should be deemed unwise to hazard exposure to the result of this change, under such circumstances as were alluded to in the commencement of these remarks.

Animate Contagion.—The first article in to-day's Journal is taken from a work just published in England, in defence of the doctrines there set forth. This work is from the pen of Dr. Adam Neale, and presents more numerous facts in support of the principles he has adopted, than one would suppose could possibly be collected from the records of medical science. Some of these facts we shall present, or an abstract of them, in future numbers, but would recommend the work to those who can get access to it, as one of unusual interest and ingenuity.

Temperature of the Human Body.—Some years ago, Dr. John Davy made a set of experiments with a view of ascertaining the changes, if any, which the temperature of the body undergoes in different parts of the globe; and the result was, that some, though but a slight elevation, occurs in warm climates, and a proportional decrease in cold countries. These experiments were lately repeated by M. Regnaud, of Paris, during a voyage in the eastern hemisphere ; and as the thermometers used were compared by M. Arago with those of the Observatory in Paris, their accuracy cannot be questioned. Four sets of observations were made in the torrid zone, and three in temperate climates ; while all were made on the same twelve individuals, robust and healthy men, fed, clothed, and lodged, in the same manner. In 10 deg. 4′ north latitude, the air being at 79 deg. of Fahrenheit, the average temperature of all the twelve was 99⅓ degrees ; in 36 deg. 10′ south latitude, the atmosphere being 62¼ deg, the average temperature of the men was 98¾ degrees ; under the line, and with an atmospheric heat of

86 deg., the animal temperature was 100 degrees. In latitude 7 deg. 1′ south, the air being at 86 deg., the body was 98½ degrees; and, again, the air being at 62½ deg., the body was at 99 degrees, and the atmosphere rising to 79 deg., the body rose to 99½ deg. Thus the atmospheric range was from 53½ deg. to 86 deg., which produced a variation in the animal heat of only one degree and a half.

On the State of Chlorides, Iodides, &c. in Solution.—Carlo Matteuci decomposed the chlorides and iodides, by means of the pile, with the expectation of being able to deduce the nature of these compounds when dissolved in water. If it were possible to decompose these combinations by means of electric currents, incapable of decomposing water, one might then justly conclude that their composition was not changed by solution in that liquid. He, therefore, took a pile composed of two elements only, charged with water rendered slightly saline, and which had no power of decomposing water even a little acidulated. The platina conductors were then dipped in a solution of muriate of copper, and after some time, the negative conductor was covered with metallic copper, whilst the positive conductor evolved bubbles of gas. Having replaced the latter conductor by one of silver, it soon became covered with a yellow film gradually changing to violet, which was considered as chloride of silver. The experiment was repeated with the iodides of zinc and iron; the platina poles had scarcely touched the solutions before the iodine, with its distinctive color, appeared at the positive pole, and the metals were reduced, and deposited upon the negative pole.

"After these experiments, it appears," says Mr. Matteuci, "that we may affirm with certainty, that these combinations, even when dissolved in water, do not change in their nature, and are not converted, as is often imagined, into muriates, hydriodates, &c. of the oxides of the metals present.—*Jour. of Roy. Inst.*

Smallpox.—During the last eighteen months, M. Louis has had the opportunity of examining the bodies of fifteen patients who died of smallpox. In eleven of these he found in the bronchia either a false membrane, or a collection of pus or blood. In one-third of the cases there was a morbid development of the glands of Brunner forming exanthematous pustules. In no case were the elliptical plates altered.—*Gazette Médicale.*

Cysts in the Heart.—M. Flandin exhibited to the Anatomical Society of Paris, at their meeting on the 6th of July last, a heart, in the left ventricle of which were cysts containing clots of blood, and the centre of these clots was filled with pus.—*Revue Méd. August*, 1831.

Pustules in the Intestines caused by the internal Administration of Tartar Emetic.—M. Guerard says that he has met with, in two persons treated by large doses of tartar emetic, pustules similar to those produced on the skin by the application to it of that article. These pustules occupied a considerable portion of the intestinal canal; there existed besides no sign of dothinenteritis. The stomach was healthy.—*Ibid.*

Co-existence of Mumps with Leucorrhœal Discharge.—Mr. John Dunn relates in the *North of England Medical and Surgical Journal*, for June last, four cases in which inflammation of the vagina and purulent discharge followed mumps. The first case occurred in a child two and a half years old, the second in a child of four years of age, and the other two were servants. The children neither slept with each other or with either of the servants.

Partial Aneurism of the Heart.—M. Vidal has exhibited to the Anatomical Society of Paris, the heart of an old woman, with a small tumor near the apex of the right ventricle. This tumor communicated with the cavity of the ventricle by a small orifice: it is lined with an organized membrane continuous with that of the heart. It contained recently coagulated blood. The disease was not suspected. The patient died with what are termed asthmatic symptoms.—*Journal Universel et Hebdom.*

Births in Prussia.—During the four years, 1826, 7, 8, and 9, the number of births in Prussia was 2,011,288; being 40,081 births for every million of inhabitants. The greater number of births occurred in the least densely inhabited districts. Of the whole number of births, 988,507 were single, 11,346 twins, 144 triplets, and 3 quadruplets.—*Memorial Encyclopedique, for August*, 1831, *from the Berlin State Gazette.*

Bowdoin College.—We understand that the Legislature of the State of Maine has abolished the office of President of Bowdoin College, and instituted that of Chancellor in its stead,—the office in all cases to be held by a layman. They have also provided that vacancies in the Board of Overseers shall be supplied by appointments by the Governor and Council of the State, and that not more than one-fifth of this Board shall consist of clergymen.

Whole number of deaths in Boston for the week ending February 24, 34. Males, 11—Females, 23.

Of consumption, 7—brain fever, 1—marasmus, 1—lung fever, 5—old age, 4—scarlet fever, 4—measles, 2—delirium tremens, 1—influenza, 1—infantile, 2—dropsy in the head, 1—spasms, 1.

ENGLISH BOOKS.

JUST received, by CARTER & HENDEE, A Dictionary of Chemistry and Mineralogy, with their applications. By ANDREW URE, M.D. Fourth Edition, with Improvements.

A Manual of Analytical Chemistry. By HENRY ROSE. Translated from the German, by JOHN GRIFFIN.

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